

(12)特許協力条約に基づいて公開された国際出願

(19) 世界知的所有権機関  
国際事務局(43) 国際公開日  
2004年3月25日 (25.03.2004)

PCT

(10) 国際公開番号  
WO 2004/024174 A1

(51) 国際特許分類: A61K 38/00, 38/21, 38/36, 38/53, 48/00, A61P 35/00, 37/02, 37/06, 37/08, 43/00

(21) 国際出願番号: PCT/JP2003/011080

(22) 国際出願日: 2003年8月29日 (29.08.2003)

(25) 国際出願の言語: 日本語

(26) 国際公開の言語: 日本語

(30) 優先権データ:  
特願2002-254967 2002年8月30日 (30.08.2002) JP(71) 出願人 (米国を除く全ての指定国について): アンジェ  
ス エムジー株式会社 (ANGES MG, INC.) [JP/JP]; 〒  
560-0082 大阪府 豊中市 新千里東町一丁目四番二号  
Osaka (JP).

(72) 発明者; および

(75) 発明者/出願人 (米国についてのみ): 珠玖 洋  
(SHIKU, Hiroshi) [JP/JP]; 〒514-0061 三重県 津市 一  
身田上津部田 1547-32 Mie (JP).(74) 代理人: 古谷 聡, 外(FURUYA, Satoshi et al.); 〒103-  
0007 東京都 中央区 日本橋浜町 2-17-8 浜町花長  
ビル 6階 Tokyo (JP).(81) 指定国 (国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB,  
BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK,  
DM, DZ, EC, EE, ES, FI, GB, GD, GE, GI, GM, HR, HU,  
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,  
LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI,  
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG,  
SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, YU, ZA, ZM, ZW.(84) 指定国 (広域): ARIPO 特許 (GH, GM, KE, LS, MW, MZ,  
SD, SL, SZ, TZ, UG, ZM, ZW), ユーラシア特許 (AM,  
AZ, BY, KG, KZ, MD, RU, TJ, TM), ヨーロッパ特許  
(AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB,  
GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR),  
OAPI 特許 (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

添付公開書類:

— 国際調査報告書

— 請求の範囲の補正の期限前の公開であり、補正書受  
領の際には再公開される。2文字コード及び他の略語については、定期発行される  
各PCTガゼットの巻頭に掲載されている「コードと略語  
のガイダンスノート」を参照。

(54) Title: METHOD AND COMPOSITION FOR REGULATING THE ACTIVITY OF REGULATORY T CELLS

(54) 発明の名称: 制御性T細胞の活性を制御する方法および組成物

(57) Abstract: It is intended to provide a composition for regulating the activity of regulatory T cells and a regulation method. Namely, a composition containing an antigen recognized by CD4<sup>+</sup>CD25<sup>+</sup> regulatory T cells or an expression vector encoding the antigen and a method of regulating an immune response of a mammal by administering the composition to the mammal. Thus, means useful in preventing and treating autoimmune diseases and allergic diseases and inhibiting rejection reaction and graft-versus-host reaction in transplantation is provided. Furthermore, the immunosuppressive state is relieved by administering interferon  $\gamma$  or administering a combination of interleukin 12 with interleukin 18. That is to say, regulatory T cells can be artificially controlled by appropriately combining the action of such a cytokine with the sensitization with SEREX antigen, which is applicable to autoimmune diseases, reactions accompanying organ transplantation, allergic reactions, regulation of tumor immunity and so on.(57) 要約: 本発明は、制御性T細胞の活性を制御するための組成物および制御方法を提供する。CD4<sup>+</sup>CD25<sup>+</sup>制御性T細胞が認識する抗原または抗原をコードする発現ベクターを含む組成物および該組成物を哺乳動物に投与して哺乳動物の免疫応答を制御する方法に関するものであり、自己免疫疾患およびアレルギー疾患の予防や治療、移植における拒絶反応や移植片対宿主反応の抑制に有用な手段を提供するものである。さらに免疫抑制状態はインターフェロン・ガンマの投与、あるいはインターロイキン12とインターロイキン18の併用投与によって解除される。すなわち、こうしたサイトカインの作用とSEREX抗原による感作とを適切に組み合わせることにより、制御性T細胞を人為的に操作することができ、自己免疫疾患、臓器移植に伴う反応、アレルギー反応および腫瘍免疫の制御等に適用することができる。

WO 2004/024174 A1

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/11080

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> A61K38/00, 38/21, 38/36, 38/53, 48/00, A61P35/00, 37/02,  
37/06, 37/08, 43/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> A61K38/00-39/44

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

BIOSIS (DIALOG), WPI (DIALOG)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	NISHIKAWA, Hiroyoshi et al., Role of SEREX-defined immunogenic wild-type cellular molecules in the development of tumor-specific immunity, Proceedings of the National Academy of Science of the USA, 04 December, 2001 (04.12.01), Vol.98, No.25, pages 14571 to 14576	1-7 8-10, 15, 17, 19
X A	YU, Min et al., HEDJ, an Hsp40 Co-chaperone Localized to the Endoplasmic Reticulum of Human Cells, The Journal of Biological Chemistry, 11 August, 2000 (11.08.00), Vol.275, No.32, pages 24984 to 24992	1-7 8-10, 15, 17, 19

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:  
 "A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier document but published on or after the international filing date  
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  
 "&" document member of the same patent family

Date of the actual completion of the international search  
02 December, 2003 (02.12.03)

Date of mailing of the international search report  
20 January, 2004 (20.01.04)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/11080

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	BARNES, Deborah E. et al., Human DNA ligase I cDNA: Cloning and functional expression in <i>Saccharomyces cerevisiae</i> , Proceedings of the National Academy of Sciences of the USA, 01 September, 1990 (01.09.90), Vol.87, No.17, pages 6679 to 6683	1-7 8-10,15,17, 19
A	SHIMIZU, Jun et al., Induction of Tumor Immunity by Removing CD25 <sup>+</sup> CD4 <sup>+</sup> T Cells: A Common Basis Between Tumor Immunity and Autoimmunity, The Journal of Immunology, 15 November, 1999 (15.11.99), Vol.163, No.10, pages 5211 to 5218	1-10,15,17, 19

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/11080

## Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 11 to 14, 16, 18

because they relate to subject matter not required to be searched by this Authority, namely:

The inventions as set forth in claims 11 to 14, 16, 18 pertain to methods for treatment of the human body by therapy.

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.